A Novel Methylene Dithioether as a Ligand: Synthesis and Molecular Structure of a Zinc(II) Complex with N₄S₂ Coordination Environment

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The octadentate ligand \([N(CH₂CH₂NH₂)(CH₂CH₂CH₂OH)(CH₂CH₂SH)]₂CH₂\), (NNOS-232)₂CH₂, was synthesized accidentally by the reaction of the unsymmetrically substituted tripod \([N(CH₂CH₂NH₂)(CH₂CH₂CH₂OH)(CH₂CH₂SH)]\), NNOS-232, with dichloromethane in the presence of aluminum hydroxide. Ligand (NNOS-232)₂CH₂ was reacted with zinc bis(perchlorate) hexahydrate to yield the complex \([\text{Zn}((\text{NNOS-232})₂\text{CH}_2)](\text{ClO}_4)_2\) I exhibiting a distorted octahedrally coordinated zinc atom in an N₄S₂ coordination environment, as shown by an X-ray diffraction study.

Key words: Zinc, Dithioacetal, Tripodal Ligands